

Construction Of Marine And Offshore Structures Second Edition Civil Engineering Advisors

Safety and Security at Sea is concerned with the safe operation of ships and consequently with preventing errors and oversights. This book contributes to safety where it is most effective - right at the site of work, on board the ship itself. It is here, indisputably, that it will prevent accidents and save lives. It translates theory into practice besides covering several new and current topics. This book is aimed at every deck officer - at every rank and on all ships. The book also attends to other manifest needs and discusses piracy, stowaways, management of crew on board and several other new and current topics in the interest of safety. All deck officers will find, when preparing for professional examinations, that the area which the oral section of these examinations at any level (Class One, Two or Three) cover - safety - is the one in which this book specialises. It will be an invaluable aid in passing these exams. By discussing essential details in every part of a voyage, parts that form different subjects in the theoretical section, it becomes an excellent reference book for them. In addition, it will also assist the staff of shipping companies in compiling ship operation manuals. This book includes the advice of various notices from the Marine Safety Agency and of guidelines from the International Maritime Organisation. It explains their requirements - International safety management code, emergency pollution control plans and others. In order to deal with ship board work thoroughly, this book takes an entire voyage into account. That is the reason for the sequence of its chapters to correspond to the progress of an actual voyage. The book begins with a ship embarking on a voyage and, in succession, conveys its message in a comfortable language. The last chapter leaves the reader at the beginning of another, but a safer, voyage. A summary is included at the end of each chapter.

This indispensable handbook provides state-of-the-art information and common sense guidelines, covering the design, construction, modernization of port and harbor related marine structures. The design procedures and guidelines address the complex problems and illustrate factors that should be considered and included in appropriate design scenarios.

Essentials of Offshore Structures: Framed and Gravity Platforms examines the engineering ideas and offshore drilling platforms for exploration and production. This book offers a clear and acceptable demonstration of both the theory and application of the relevant procedures of structural, fluid, and geotechnical mechanics to offshore structures. It The Present Book Marine And Offshore Engineering Is Written To Serve As A Guide And Reference For Practicing Engineers, Both Designers And Contractors. The Book Presents Current Development In A Variety Of Areas That Impact Offshore And Marine Engineering. It Provides Valuable Insights Into The Following Chapters: Chapter 1: Introduction Chapter 2: The Marine Working Environment Chapter 3: The Offshore And Sea Environmental Problems Chapter 4: The Seafood Structures Chapter 5: Moorings And Anchors Towing And Diving Chapter 6: The Offshore Electrical Power Chapter 7: The Offshore Piling Chapter 8: Breakwater Structures And Offshore Terminals Chapter 9: The Removal Of Offshore Structures And Construction Of Offshore Platforms Chapter 10: The Technique Of Concreting And Grouting Chapter 11: The Seafloor Of The Ocean And The Nature Of Marine Soil Chapter 12: The Structural Components Of The Offshore Platform Chapter 13: The Nature Of Deep Sea Construction This Book Is Very Useful Not Only For Marine Engineering Students But Also For Research Scholars And Teachers.

This book focuses on the construction of remote islands and reefs in the Maritime Silk Road. Firstly, it analyzes the functions, necessity and difficulties of the construction of remote islands and reefs; then provides corresponding countermeasures. According to the urgent demand of electricity and freshwater, it focus on wave and offshore wind energy evaluation of the important remote islands and reefs of the Maritime Silk Road, providing reference for the choice of location of power plants, daily operation and long term plan of wave/wind power generation. Several important key points are selected in the case study to realize their electricity and freshwater self-sufficiency and thus to improve their viability. This book also presents the marine characteristics (especially hazardous elements) under the demands of island runway construction and marine new energy development, to promote safe and efficient implementation of the remote islands and reefs construction. This book is one of the series of publications on the 21st Century Maritime Silk Road (shortened as "Maritime Silk Road"). It covers the characteristics of the marine environment and marine new energy, remote islands and reefs construction, climate change, early warning of wave disasters, legal escort, marine environment and energy big data construction, etc. contributing to the safe and efficient construction of the Maritime Silk Road. It aims to improve our knowledge of the ocean, thus to improve the capacity for marine construction, enhance the viability of remote islands and reefs, ease the energy crisis and protect the ecological environment, improve the quality of life of residents along the Maritime Silk Road, and protect the rights, interests of the countries and regions participating in the construction of the Maritime Silk Road. It will be a valuable reference for decision-makers, researchers, and marine engineers working in the related fields.

Marine Structural Design, Second Edition, is a wide-ranging, practical guide to marine structural analysis and design, describing in detail the application of modern structural engineering principles to marine and offshore structures. Organized in five parts, the book covers basic structural design principles, strength, fatigue and fracture, and reliability and risk assessment, providing all the knowledge needed for limit-state design and re-assessment of existing structures. Updates to this edition include new chapters on structural health monitoring and risk-based decision-making, arctic marine structural development, and the addition of new LNG ship topics, including composite materials and structures, uncertainty analysis, and green ship concepts. Provides the structural design principles, background theory, and know-how needed for marine and offshore structural design by analysis Covers strength, fatigue and fracture, reliability, and risk assessment together in one resource, emphasizing practical considerations and applications Updates to this edition include new chapters on structural health monitoring and risk-based decision making, and new content on arctic marine structural design

Keating on Offshore Construction and Marine Engineering Contracts provides in-depth guidance on the agreements involved in the construction of ships, rigs and other offshore vessels and structures. It will equip marine construction lawyers with a one-stop reference on all aspects of the modern shipbuilding and offshore engineering contracts and for dealing effectively with the problems that may arise.

Offshore Structures: Design, Construction and Maintenance, Second Edition covers all types of offshore structures and platforms employed worldwide. As the ultimate reference

for selecting, operating and maintaining offshore structures, this book provides a roadmap for designing structures which will stand up even in the harshest environments. Subsea pipeline design and installation is also covered in this edition, as is the selection of the proper type of offshore structure, the design procedure for the fixed offshore structure, nonlinear analysis (Push over) as a new technique to design and assess the existing structure, and more. With this book in hand, engineers will have the most up-to-date methods for performing a structural lifecycle analysis, implementing maintenance plans for topsides and jackets and using non-destructive testing. Provides a one-stop guide to offshore structure design and analysis Presents easy-to-understand methods for structural lifecycle analysis Contains expert advice for designing offshore platforms for all types of environments

Dynamics of Fixed Marine Structures, Third Edition proves guidance on the dynamic design of fixed structures subject to wave and current action. The text is an update of the "UR8" design guide "Dynamics of Marine Structures" with discussion of foundations, wind turbulence, offshore installations, earthquakes, and strength and fatigue. The book employs analytical methods of static and dynamic structural analysis techniques, particularly the statistical and spectral methods when applied to loading and in the calculating dynamic responses. The statistical methods are explained when used to wave, wind, and earthquake calculations, together with the problems encountered in actual applications. Of importance to fixed offshore platforms are the soil properties and foundation covering soil behavior, site investigation, testing, seabed stability, gravity structures, and the use of single piles. Methods of forecasting, measuring, and modeling of waves and currents are also presented in offshore structure construction. Basic hydrodynamics is explained in understanding wave theory, and some description is given to forecasting of environmental conditions that will affect the structures. The effects of vortex-induced vibrations on the structure are explained, and the three methods that can prevent vortex-induced oscillations are given. Wind turbulence or wind loads are analyzed against short natural period or long natural periods of structures. The transportation of offshore platforms, installation, and pile driving, including examples of the applications found in the book, are given as well. The guide is helpful for offshore engineers, designers of inshore jetties, clients needing design and analysis work, specialists related to offshore structural engineering, and students in offshore engineering.

Jackups, semisubmersibles and drillships are the marine vessels used to drill offshore wells and are referred to collectively as mobile offshore drilling units (MODUs). MODUs are supplied through newbuild construction and operate throughout the world in highly competitive regional markets. The Offshore Drilling Industry and Rig Construction Market in the Gulf of Mexico examines the global MODU service and construction industry and describes the economic impacts of rig construction in the United States. The industrial organization and major players in the contract drilling and construction markets are described and categorized. Dayrates in the contract drilling market are evaluated and hypotheses regarding dayrate factors are tested. Models of contractor decision-making are developed, including a net-present value model of newbuilding investment and stacking decisions, and market capitalization models are derived. Jackup construction shipyards and processes are reviewed along with estimates of labor, equipment, and material cost in U.S. construction. Derivation of newbuild and replacement cost functions completes the treatise. The comprehensive and authoritative coverage of The Offshore Drilling Industry and Rig Construction Market in the Gulf of Mexico makes it an ideal reference for engineers, industry professionals, policy analysts, government regulators, academics and other readers wanting to learn more about this important and fascinating industry.

While the existing literature on offshore structures touch on model testing, a comprehensive text discussing the design, construction, instrumentation, testing and analysis of the physical model is lacking. This book fills that vacuum and provides, through its survey of the theoretical and practical aspects of physical modeling, an in-depth coverage of the technology of model testing. Its usefulness runs through the entire field of engineering, reaching far beyond its focus on offshore construction; and its breadth of scope should appeal not only to engineers and naval architects but to scientists interested in structural or hydraulic testing as well. Contents: Introduction Modeling Laws Model Construction Techniques Model Testing Facility Modeling of Environment Instrumentation and Signal Control Modeling of Fixed Offshore Structures Modeling of Offshore Operations Seakeeping Tests Data Analysis Techniques Readership: Undergraduates and engineers in coastal engineering, naval architects, scientists interested in structural or hydraulic testing.

keywords: Physical Modeling; Scaling Laws; Hydrodynamics; Testing Facilities: Instruments; Offshore Structures; Wave Generation; Seakeeping "... a thorough and well-written book ... could only have been written by someone with a wealth of personal experience. The breadth of material in each chapter is truly impressive and valuable; and the abundance of relevant references ... adds considerably to the value of the book. These references will be especially beneficial to those wishing to pursue the individual topics in more detail ... it will serve as a valuable reference to anyone working in this field. It is an important contribution to the field of offshore modelling." Coastal Engineering

Offshore Engineering continues to develop and expand rapidly. While in the public eye its focus has shifted towards subsea and floating developments in ever deeper waters, bottom founded structures are still at the industry's heart. The fixed structure remains its dependable workhorse and even today newly installed fixed structures far outnumber subsea and floating applications. Additionally, the knowledge and technology that have (literally) pushed the boundaries of Offshore Engineering into ever more demanding environments and water depths have been largely pioneered by bottom founded structures. An engineer's central skill is to develop coherent and balanced models for the problems encountered. Regrettably, due to availability of ever more sophisticated computer applications this expertise is at risk of getting lost, and adopting computer outcomes without truly understanding the models and their limitations is naive, risky and unprofessional. Therefore, every engineer needs fundamental knowledge and understanding of underlying theories and technologies. This Handbook is intended to help offshore engineers acquire and sustain relevant expertise in some notoriously difficult subjects. It

attempts to stimulate reflection and critical evaluation of the models used and the strengths and weaknesses of the solutions found. While dealing more specifically with bottom founded structures, the material is generally applicable to offshore structures of all types. The Handbook can be used as a textbook for Master's students and as a manual and reference guide for practising professionals.

Ship-shaped offshore units are some of the more economical systems for the development of offshore oil and gas, and are often preferred in marginal fields. These systems are especially attractive to develop oil and gas fields in deep and ultra-deep water areas and remote locations away from existing pipeline infrastructures. Recently, the ship-shaped offshore units have been applied to near shore oil and gas terminals. This 2007 text is an ideal reference on the technologies for design, building and operation of ship-shaped offshore units, within inevitable space requirements. The book includes a range of topics, from the initial contracting strategy to decommissioning and the removal of the units concerned. Coverage includes both fundamental theory and principles of the individual technologies. This book will be useful to students who will be approaching the subject for the first time as well as designers working on the engineering for ship-shaped offshore installations.

This book addresses the concepts of material selection and analysis, choice of structural form, construction methods, environmental loads, health monitoring, non-destructive testing, and repair methodologies and rehabilitation of ocean structures. It examines various types of ocean and offshore structures, including drilling platforms, processing platforms and vessels, towers, sea walls and surge barriers, and more. It also explores the use of MEMS in offshore structures, with regard to military and oil exploration applications. Full-color figures as well as numerous solved problems and examples are included to help readers understand the applied concepts.

The Encyclopedia of Maritime and Offshore Engineering (EMOE) provides an unparalleled major reference work covering the design, construction and operation of ships, offshore installations and other marine structures used for transportation, exploration and the exploitation of ocean-based resources including oil, gas and renewable energy. It embraces all of the disciplines of engineering and naval architecture that are found in the complementary marine and offshore industries. Advances in ship technology, the growth of the offshore energy sector, and increasing activities in arctic and ultra-deepwater environments all highlight the need for an up-to-date reference work on the proposed scale. Operational and regulatory aspects of maritime industries will also be included. The technical sections are supported by the appropriate theoretical background information: for example, hydrodynamics and numerical analysis methods of fluid and stress analysis. The full editorial team and contributing authors is drawn worldwide from renowned engineers, scientists and practitioners in both the academic and industrial sectors.

The Definitive Reference for Designers and Design Students A solid grasp of the fundamentals of materials, along with a thorough understanding of load and design techniques, provides the components needed to complete a marine platform design. Design Principles of Ships and Marine Structures details every facet of ship design and design integration, and highlights the design aspects that must be put together to create an integrated whole product. This book discusses naval architecture and marine engineering applications and principles relevant to the design of various systems, examines advanced numerical techniques that can be applied to maritime design procedure at the concept design stage, and offers a comprehensive approach to the subject of ship design. Covers the Entire Sphere of Marine Design The book begins with an introduction to marine design and the marine environment, describing many of the marine products that are used for transportation, defense and the exploitation of marine resources. It also discusses stability issues relevant to ship design, as well as hydrodynamic aspects of resistance, propulsion, sea keeping and maneuvering, and their effects on design. In addition to covering the various systems and sub-systems that go into making a complex product to be used in maritime environment, the author explains engineering economics and its application in ship design, and provides examples wherever necessary. Written by an author with more than 35 years of teaching experience, this book: Describes various design methodologies such as sequential design process with the application of concurrent engineering and set based design factors in the use of computer-aided design techniques Highlights the shape design methodology of ship forms and layout design principles Considers design aspects relative to safety and risk assessment Introduces the design for production aspects in marine product development Discusses design principles for sustainability Explains the principles of numerical optimization for decision-making Design Principles of Ships and Marine Structures focuses on ship design efficiency, safety, sustainability, production, and management, and appeals to students and design professionals in the field of shipping, shipbuilding and offshore engineering.

The perfect guide for veteran structural engineers or for engineers just entering the field of offshore design and construction, Marine Structural Design Calculations offers structural and geotechnical engineers a multitude of worked-out marine structural construction and design calculations. Each calculation is discussed in a concise, easy-to-understand manner that provides an authoritative guide for selecting the right formula and solving even the most difficult design calculation. Calculation methods for all areas of marine structural design and construction are presented and practical solutions are provided. Theories, principles, and practices are summarized. The concentration focuses on formula selection and problem solving. A "quick look up guide", Marine Structural Design Calculations includes both FPS and SI units and is divided into categories such as Project Management for Marine Structures; Marine Structures Loads and Strength; Marine Structure Platform Design; and Geotechnical Data and Pile Design. The calculations are based on industry code and standards like American Society of Civil Engineers and American Society of Mechanical Engineers, as well as institutions like the American Petroleum Institute and the US Coast Guard. Case studies and worked examples are included throughout the book. Calculations are based on industry code and standards such as American Society of Civil Engineers and American Society of Mechanical Engineers Complete chapter on modeling using SACS software and PDMS software Includes over 300 marine structural construction and design calculations Worked-out examples and case studies are provided throughout the book Includes a number of checklists, design schematics and data tables

Fifty years ago, in November 1947, Brown & Root helped Kerr-McGee build the first out-of-sight-land offshore platform that produced oil. The date is widely celebrated as the birth of the modern offshore industry. In the years since this historic occasion, Brown & Root has continued to pioneer in the design and construction of offshore pipelines and platforms. Along with the rest of the offshore industry, the company has helped develop technology capable of finding and producing oil in deepwater and in harsh environments around the world. This history puts a human face on the process of technological change. Using the words of many of those who took part in Brown & Root's offshore activities, this book recounts their efforts to find practical ways to recover offshore oil. Building on lessons learned in the Gulf of Mexico before and after World War II, the company's personnel adapted offshore technologies to conditions encountered in Venezuela, the Middle East, Alaska, and other regions before becoming one of the first engineering and construction companies to confront the challenge of North Sea development in the 1960's. Through times of boom and bust in the oil industry, the search for effective technology had continued. The process has not always been smooth, but the results have been impressive. As we enter a new and exciting era in offshore technology, the history of the first fifty years of the industry provides a useful context for understanding current and future events.

Design practice in offshore geotechnical engineering has grown out of onshore practice, but the two application areas have tended to diverge over the last thirty years, driven partly by the scale of the foundation and anchoring elements used offshore, and partly by fundamental differences in construction and installation techniques. As a consequence offshore geotechnical engineering has grown as a speciality. The structure of Offshore Geotechnical Engineering follows a pattern that mimics the flow of a typical offshore project. In the early chapters it provides a brief overview of the marine environment, offshore site investigation techniques and interpretation of soil behaviour. It proceeds to cover geotechnical design of piled foundations, shallow foundations and anchoring systems. Three topics are then covered which require a more multi-disciplinary approach: the design of mobile drilling rigs, pipelines and geohazards. This book serves as a framework for undergraduate and postgraduate courses, and will appeal to professional engineers specialising in the offshore industry.

Marine Structures Engineering is designed to help engineers meet the growing worldwide demand for construction of new ports and the modernization of existing ports and terminals. It provides an authoritative guide to the design, construction, rehabilitation, repair, and maintenance of port and harbor structures. Each chapter is self-contained, allowing readers to access specific information. The Author draws on his extensive experience in offshore structure and port engineering to demonstrate evaluation, rehabilitation, repair, and maintenance of in-service marine structures. Also covered in detail are state-of-the-art approaches to: *marine structures in cold regions, with special attention to the role of ice loads, permafrost, and other ice effects *shiplifts, marine railways, shipways, and dry docks *offshore moorings *floating breakwaters *marinas *structures that protect bridge piers from ship impact. Offering practical information on all aspects of marine structures, this book serves as an indispensable resource to all engineers and professionals involved in design, construction, maintenance, and modernization of ports and harbors.

Dynamics of Offshore Structures provides an integrated treatment of the main subject areas that contribute to the design, construction, installation, and operation of fixed and floating offshore structures. The book begins with an overview of offshore oil and gas development and offshore structures. Separate chapters follow on the ocean environment; basic fluid mechanics; gravity wave theories; fluid loading on offshore structures; hydrostatics and dynamic response of floating bodies; and model testing of offshore structures. This book is prepared with particular emphasis on the fundamentals of oceanography, basic fluid mechanics, wave theory, hydrodynamics, naval architecture, and structural analysis to meet the needs of students reading ocean engineering or naval architecture, at both undergraduate and postgraduate levels. Basic equations and theoretical results are derived in a rigorous manner but sections on model testing, full-scale measurements, design, and certification are also included to ensure that the book is of value to professional engineers seeking a balanced treatment of fundamental and practical issues.

The generation of offshore energy is a rapidly growing sector, competing for space in an already busy seascape. This book brings together the ecological, economic, and social implications of the spatial conflict this growth entails. Covering all energy-generation types (wind, wave, tidal, oil, and gas), it explores the direct and indirect impacts the growth of offshore energy generation has on both the marine environment and the existing uses of marine space. Chapters explore main issues associated with offshore energy, such as the displacement of existing activities and the negative impacts it can have on marine species and ecosystems. Chapters also discuss how the growth of offshore energy generation presents new opportunities for collaboration and co-location with other sectors, for example, the co-location of wild-capture fisheries and wind farms. The book integrates these issues and opportunities, and demonstrates the importance of holistic marine spatial planning for optimising the location of offshore energy-generation sites. It highlights the importance of stakeholder engagement in these planning processes and the role of integrated governance, with illustrative case studies from the United States, United Kingdom, northern Europe, and the Mediterranean. It also discusses trade-off analysis and decision theory and provides a range of tools and best practices to inform future planning processes.

'Analysis and Design of Marine Structures' explores recent developments in methods and modelling procedures for structural assessment of marine structures: - Methods and tools for establishing loads and load effects; - Methods and tools for strength assessment; - Materials and fabrication of structures; - Methods and tools for structural design and optimisation; - Structural reliability, safety and environment protection. The book is a valuable reference source for academics, engineers and professionals involved in marine structures and design of ship and offshore structures.

Due in part to a growing demand for offshore oil and gas exploration, the development of marine structures that initially started onshore is now moving into deeper offshore areas. Designers are discovering a need to revisit basic concepts as they anticipate the response behavior of marine structures to increased water depths. Providing a simplified approach to the subject, Advanced Marine Structures explains the fundamentals and advanced concepts of marine architecture introduces various types of offshore platforms, and outlines the different stages of marine structure analysis and design. Written from a structural engineering perspective, this book focuses on structures constructed for offshore oil and gas exploration, various environmental loads, ultimate load design, fluid-structure interaction, fatigue, and fracture. It also offers detailed descriptions of different types of structural forms, functions and limitations of offshore platforms and explains how different loads act on each. In addition, the text incorporates examples and application problems to illustrate the use of experimental, numerical, and analytical studies in the design and development of marine structures, and reviews relevant literature on wave interaction and porous cylinders. This book: Focuses on structural reliability Deliberates on fracture and fatigue and examines their application in marine structures Introduces ideas on the retrofit and renovation of marine structures Examines the strength analysis of offshore structures and structural members Advanced Marine Structures examines the design of offshore structures from a structural engineering perspective and explains the design methodologies and guidelines needed for the progressive conceptualization and design of advanced marine structures.

The mooring system is a vital component of various floating facilities in the oil, gas, and renewables industries. However, there is a lack of comprehensive technical books dedicated to the subject. Mooring System Engineering for Offshore Structures is the first book delivering in-depth knowledge on all aspects of mooring systems, from design and analysis to installation, operation, maintenance and integrity management. The book gives beginners a solid look at the fundamentals involved during mooring designs with coverage on current standards and codes, mooring analysis and theories behind the analysis techniques. Advanced engineers can stay up-to-date through operation, integrity management, and practical examples provided. This book is recommended for students majoring in naval architecture, marine or ocean engineering, and allied disciplines in civil or mechanical engineering. Engineers and researchers in the offshore industry will benefit from the knowledge presented to understand the various types of mooring systems, their design, analysis, and operations. Understand the various types of mooring systems and the theories behind mooring analysis Gain practical experience and lessons learned from worldwide case studies Combine engineering fundamentals with practical applications to

solve today's offshore challenges

For two decades, Ben Gerwick's ability to capture the current state of practice and present it in a straightforward, easily digestible manner has made Construction of Marine and Offshore Structures the reference of choice for modern civil and maritime construction engineers. The third edition of this perennial bestseller continues to be the most modern and authoritative guide in the field. Based on the author's lifetime of experience, the book also incorporates relevant published information from many sources. Updated and expanded to reflect new technologies, methods, and materials, the book includes new information on topics such as liquefaction of loose sediments, scour and erosion, archaeological concerns, high-performance steel, ultra-high-performance concrete, steel H piles, and damage from sabotage and terrorism. It features coverage of LNG terminals and offshore wind and wave energy structures. Clearly, concisely, and accessibly, this book steers you away from the pitfalls and toward the successful implementation of principles that can bring your marine and offshore projects to life.

Marine and Offshore Corrosion describes the principles of effective corrosion control treatments in marine environments, with emphasis on economic solutions to corrosion. The book explains chemical or electrochemical reaction of an alloy with its environment leading to corrosion, and mechanical loss of the metal by erosion, abrasion, or wear resulting also in corrosion. A main consideration of erosion control that the engineer should look into is the economic side. Other considerations that he should investigate are the strength of a structure, time for construction, availability of materials, and costs. The book also discusses the marine environment consisting of sea water, temperature fluctuations, dissolved gases, hydrogen sulphide, ammonia, carbon dioxide, electrical conductivity, fouling. The text describes the selection of materials to be used in marine environments, surface preparation of steel before painting, the type of paint, and metallic coatings. Some of the factors in selecting coating systems are: cost and estimated life before the first scheduled maintenance, adhesion properties, moisture tolerance, elasticity, chemical resistance, impact resistance, bacterial resistance. The factors affecting maintenance include environmental conditions, quality of initial protection applied, type of structure, as well as the design and purpose of the structure. The book has been prepared for engineers and designers who are not corrosion specialists but have to deal with marine corrosion problems as part of their day-to-day professional activities. The text will also turn out to be useful for engineers with general interest in structure, building, or machinery maintenance specially those located near coastal areas.

This three-volume work presents the proceedings from the 19th International Ship and Offshore Structures Congress held in Cascais, Portugal on 7th to 10th September 2015. The International Ship and Offshore Structures Congress (ISSC) is a forum for the exchange of information by experts undertaking and applying marine structural research. The aim of this is the leading text on shipbuilding and marine construction, already widely used on a global basis by shipowners, shipbuilders and their commercial and legal advisers. It is now ten years since the last edition and much has changed in the world of shipbuilding since then, particularly in the period since 2008 which has seen numerous attempts by owners to renegotiate the prices and/or delivery dates of tonnage and an enormous increase in the level of "vessel rejection" and cancellation disputes. The Law of Shipbuilding Contracts examines the principles of English contract law as these apply to shipbuilding. This edition comments in detail upon the Shipbuilders' Association of Japan Form but now contrasts this with the NEWBUILDCON from BIMCO in 2007 and the China Maritime Arbitration Commission Forms from 2011 where these are significantly different. It also includes sections dealing with agreements ancillary to the shipbuilding contract and conversion contracts. Overview of book: Since the last edition in 2002, China has become a major global exporter of newbuildings and new BIMCO shipbuilding contract form has been published. Although retaining the original format of commentary on the Japanese (SAJ) standard form shipbuilding contract, the new edition contrasts this with the BIMCO form and the recently published China Maritime Arbitration Commission (CMAC) form in order to provide a broad ranging analysis of this complex subject. The book details the principles of English contract law as these apply to international shipbuilding. It will, as in the previous editions, also include sections dealing with the guarantees and other agreements which support the shipbuilding contract and with ship conversion contracts Essential reading for: - Purchasers and charterers of newbuilding tonnage - Shipbuilders and offshore construction yards - Lawyers and insurers working in the maritime and offshore oil and gas sectors - Banks and other finance providers

Methods and practices for constructing sophisticated prestressed concrete structures. Construction of Prestressed Concrete Structures, Second Edition, provides the engineer or construction contractor with a complete guide to the design and construction of modern, high-quality concrete structures. This highly practicable new edition of Ben C. Gerwick's classic guide is expanded and almost entirely rewritten to reflect the dramatic developments in materials and techniques that have occurred over the past two decades. The first of the book's two sections deals with materials and techniques for prestressed concrete, including the latest recipes for high-strength and durable concrete mixes, new reinforcing materials and their placement patterns, modern prestressing systems, and special techniques such as lightweight concrete and composite construction. The second section covers application to buildings; bridges; pilings; and marine structures, including offshore platforms, floating structures, tanks, and containments. Special subjects such as cracking and corrosion, repair and strengthening of existing structures, and construction in remote areas are presented in the final chapters. For engineers and construction contractors involved in any type of prestressed concrete construction, this book enables the effective implementation of advanced structural concepts and their economical and reliable translation into practice.

The leading authority in the field offers a unique and comprehensive treatment of the construction aspects of offshore structures, rather than the more commonly addressed design considerations. Extensively updated, this second edition provides a new chapter on extending offshore technologies to inland waterways and emphasizes recent advances including floating structures, deep-water structures, ice-resistant structures, and bridge foundations. Construction of Marine and Offshore Structures details all the particulars of building in a marine environment, including construction equipment, marine operations, installing piles, pipelines, and cables, steel and concrete offshore platforms, and underwater repairs. Construction of Marine and Offshore Structures provides an essential reference to engineers in the oil and service industries and to marine construction planners, designers, and contractors. New in the second edition: How the physical environment and geotechnical conditions affect construction Increased attention to protecting the natural environment and compliance with regulatory provisions Recent developments in positioning, instrumentation, and underwater inspection, plus a new section on concrete and steel floating structures and installing permanent moorings Expanded treatment of deep water bridge piers as well as locks and dams on major rivers.

Successfully estimate risk and reliability, and produce innovative, yet reliable designs using the approaches outlined in Offshore Structural Engineering: Reliability and Risk Assessment. A hands-on guide for practicing professionals, this book covers the reliability of offshore structures with an emphasis on the safety and reliability of offshore facilities during analysis, design, inspection, and planning. Since risk assessment and reliability estimates are often based on probability, the author utilizes concepts of probability and statistical analysis to address the risks and uncertainties involved in design. He explains the concepts with clear illustrations and tutorials, provides a chapter on probability theory, and covers various stages of the process that include data collection, analysis, design and construction, and

commissioning. In addition, the author discusses advances in geometric structural forms for deep-water oil exploration, the rational treatment of uncertainties in structural engineering, and the safety and serviceability of civil engineering and other offshore structures. An invaluable guide to innovative and reliable structural design, this book: Defines the structural reliability theory Explains the reliability analysis of structures Examines the reliability of offshore structures Describes the probabilistic distribution for important loading variables Includes methods of reliability analysis Addresses risk assessment and more Offshore Structural Engineering: Reliability and Risk Assessment provides an in-depth analysis of risk analysis and assessment and highlights important aspects of offshore structural reliability. The book serves as a practical reference to engineers and students involved in naval architecture, ocean engineering, civil/structural, and petroleum engineering.

Offshore platforms face many risks, including a hostile ocean environment, extreme temperatures, overpressure loads, fire risks, and hydrocarbon explosions, all of which pose unique challenges in designing their topside platforms. The topside design also involves the selection of appropriate materials to reduce fire risk without compromising the functional requirements. These platforms serve valuable, utility, production, and processing purposes, and can also provide living quarters for personnel. Concepts such as basic design, special design, materials selection, and risk hazards are explained in the authors' straightforward classroom style, and are based on their rich experience in both academia and industry. Features • Includes practical examples which are solved using international codes to offer a better understanding of the subjects presented • Addresses safety and risk of offshore platforms, and considers numerous topside accident scenarios • Discusses the structural and mechanical properties of various materials, such as steel and newer functionally graded materials (FGMs) Design Aids for Offshore Topside Platforms Under Special Loads serves as a design manual for multi-disciplinary engineering graduates and practicing professionals working in civil, mechanical, offshore, naval, and petroleum engineering fields. In addition, the book will serve as reference manual for practicing design engineers and risk assessors.

With thirty per cent of the world's oil and gas production coming from offshore areas, the construction of specialist vessels to perform offshore operations is a crucial part of the industry. However, with exploration and production being performed in increasingly exacting locations, the scope for disputes arising from cost overruns, scheduling delays and technical difficulties is immense. In the absence of legal precedent, this ground-breaking title provides practical guidance on avoiding and resolving disputes in the construction of offshore units and vessels, including FPSOs, drilling units, OSVs and fixed platforms. Written by a leading team at Stephenson Harwood, this book covers the entire construction process from initial concept right through to installation, at each stage commenting on typical contract terms and offering expert advice based on real-life examples. Key topics include: Design risk Changes to the work Consequences of delay Acceptance Tests Termination Dispute resolution This unique text will be of enormous assistance both to legal practitioners and offshore construction professionals including project managers, financiers, insurers, and sub-contractors.

Construction of Marine and Offshore StructuresCRC Press

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